



NUCLEAR ENERGY INSTITUTE

Dr. Ronald L. Simard
SENIOR DIRECTOR, NEW PLANT DEPLOYMENT
NUCLEAR GENERATION DIVISION

January 12, 2004

Mr. James E. Lyons
Program Director, New, Research and Test Reactors Program
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Generic Topic COL-2 (Development of COL Application Guidance)

PROJECT 689

Dear Mr. Lyons:

We appreciated the opportunity on November 20 to discuss with you and your staff our ongoing activities and plans for developing COL application (COLA) guidance (Generic Topic COL-2) and addressing other COL process/Construction Inspection Program (CIP) issues. We are providing this letter as a follow-up to our November 20 discussions and to request feedback from the staff in five areas related to COLA guidance as discussed in Enclosure 1:

1. COL application scope/contents
2. COL application FSAR
3. Level of detail for COLA information
4. Addressing COL Items identified in generic DCDs
5. Plans for developing detailed COLA outlines

Since we are at the front end of significant COLA-related work, early NRC feedback in these areas is important to ensure that our activities proceed in a direction consistent with NRC staff expectations and to identify for discussion areas where our expectations may differ. Establishing common understandings up front on several fundamental points is important to provide a sound basis for development of complete COLA guidance over the next two years.

Development of COLA guidance is a key part of a broader set of industry activities to pave the way for licensing, construction and start-up of new nuclear plants under 10 CFR Part 52. Our goal is two-fold: (1) to resolve ITAAC and other key process issues by the end of 2004 and thus provide crucial input to new plant business decisions that are expected after that time, and (2) to resolve COL application and review issues over

D04b

Mr. James E. Lyons - NRC
January 12, 2004
Page 2 of 3

the next two years (by the end of 2005) to support preparation and submittal of a COL application in the 2006-2007 time frame.

Resolution of COL Process/CIP Issues

Enclosure 2 provides our list of COL/CIP issues identified to date as requiring discussion with the NRC. The table below summarizes the status of a subset of these activities that encompass the key process issues that need to be resolved to support new plant business decisions. In particular, we have recently participated in NRC workshops on programmatic ITAAC and the Construction Inspection Program, and we have provided industry comments on the Part 52 update rulemaking. We are evaluating the staff's recently provided views of the post-construction hearing process, and interactions continue related to CIP issues.

COL/CIP Topic	NRC Vehicle	Written Industry Comments	NRC Milestone
COL-8 – Treatment of operational programs; need for programmatic ITAAC	July 1, 2003, proposal and Aug. 25, 2003, workshop	Sept. 15, 2003	SECY recommendations March 2004
COL-3, 4, & 6 – Engr. design verification; ITAAC verification and transition to operation under Part 52	May 2003 Draft CIP Framework Doc And Aug. 27, 2003, Workshop	Oct. 30, 2003	Revised CIP Framework Doc April 2004
COL-5 – Post-construction hearing process	COL-5 letter to NEI Dec. 5, 2003	TBD	TBD
COL-7 – Enhance/clarify Part 52 requirements	Part 52 update NOPR July 3, 2003	Sept. 16 & 30, 2003	Proposed Final Rule – Aug. 2004

As necessary to ensure that common understandings on key COL process and CIP issues are clearly documented, we envision that NEI and NRC will exchange issue resolution letters similar to those previously exchanged concerning generic ESP issues.

Development of COL Application Guidance

As discussed with the NRC staff on November 20, we have begun development of guidance for preparing COL applications. We envision that this guidance document (NEI 04-01) will provide an effective vehicle for addressing significant issues concerning the format and content of COL applications and issues related to NRC review thereof. As part of guidance for meeting COL application content requirements, the guideline

Mr. James E. Lyons - NRC
January 12, 2004
Page 3 of 3

will contain sections on special topics unique or particularly significant to the Part 52 COL process.

These topics may include:

- Operational programs
- Completion of design certification ITAAC at COL
- Plant specific design information and associated ITAAC
- Change processes for COL application info
- Quality assurance requirements
- Seismic requirements
- Emergency planning requirements
- PRA update requirements
- Other issues as identified by the industry or NRC

We expect to complete Revision 0 of NEI 04-01 and provide it for NRC review by December 2004. In 2005, we expect to receive and address NRC comments, incorporate additional COL application and process guidance based on continuing discussions with the staff, and seek NRC endorsement of NEI 04-01, Revision 1. We expect that the process for obtaining NRC endorsement of NEI 04-01 will be similar to that which led to NRC endorsement in Regulatory Guide 1.188 of NEI 95-10, "Industry Guideline for Implementing the License Renewal Rule."

To support resolution of ITAAC and other key COL/CIP process issues and development of NEI 04-01, Revision 0, we expect to meet frequently (e.g., every six to eight weeks) with the NRC staff during 2004, starting with our public meeting scheduled for January 29. We look forward to these discussions and to getting the staff's feedback on the matters discussed in Enclosure 1.

If you have any questions regarding the activities outlined above or the feedback requested in Enclosure 1, please contact me (202-739-8128 or rls@nei.org) or Russ Bell (202-739-8087 or rjb@nei.org).

Sincerely,



Ron Simard

Enclosures

c: Joe Sebrosky, NRC/NRR

Enclosure 1

On November 20, we described that our COLA guidance activities are premised on basic understandings in five areas: (1) COL application scope/contents; (2) COL application FSAR; (3) level of detail for COLA information; (4) addressing COL Items in generic DCDs; and (5) plans for developing detailed COL application outlines. Additional information on these topics is provided below for NRC consideration and discussion at our next public meeting. Because these understandings are fundamental to our COLA guidance activities, we request that the NRC confirm these understandings as soon as possible.

- 1. COL Application Scope/Contents** – As discussed with the staff on November 20, the figure in Attachment 1 depicts the general scope and contents of a COL application as well as information outside the application that would be available on-site for NRC inspection. Specific discussion of the FSAR portion of a COL application is provided below.
- 2. COL Application FSAR** – A COL application will contain an FSAR that includes a plant-specific DCD covering the scope of the standard plant approved in a design certification and required information outside the scope of the standard plant design. As discussed with the NRC staff on November 20, we envision that the plant-specific DCD would actually be an integral part of the FSAR. Consistent with Part 52 requirements, the FSAR (with integrated plant-specific DCD) would be organized in accordance with the numbering scheme of the generic DCD.

This is consistent with the FSAR structure envisioned by the Commission in the May 12, 1997, Statements of Consideration for the ABWR design certification final rule:

The Commission expects that the plant-specific DCD will become the plant's final safety analysis report (FSAR), by including within its pages, at the appropriate points, information such as site-specific information (or the portions of the plant outside the scope of the referenced design, including related ITAAC, and other matters required to be included in an FSAR by 10 CFR 50.34. Integration of the plant-specific DCD and remaining site-specific information into the plant's FSAR, will result in an application that is easier to use and should minimize "duplicate documentation" and the attendant possibility for confusion.

As required by Part 52, the generic DCD will be incorporated by reference in the COL application. Thus, where there are no plant-specific exemptions or departures that affect information in the generic DCD, we envision that the

plant-specific DCD/FSAR would incorporate generic DCD information by reference rather than repeat it. Where there are COL applicant exemptions or departures, the plant-specific DCD/FSAR would identify the changes and provide plant-specific design description, as appropriate, corresponding to and superceding the affected generic DCD information.

The FSAR will also present information beyond the scope of a referenced design certification. For example, we envision that a COL application that references the AP600 design certification would include in its FSAR a Section 9.5.1.9 on Fire Protection Program Implementation (consistent with the Commission's September 11, 2002, SRM on treatment of operational programs).

In sum, the FSAR will include the plant-specific DCD and consist of:

- Incorporation by reference of generic DCD information that is unaffected by plant-specific exemptions or departures
- Identification of plant-specific exemptions or departures and plant-specific design description, as appropriate, corresponding to and superceding the affected generic DCD information
- Required FSAR information beyond the scope of a referenced design certification

The integrated combination of the plant-specific DCD and required information beyond the scope of design certification will be known as the FSAR. The attached figure depicts the relationship and general contents of the FSAR and the plant-specific DCD within an overall COL application. Our September 30, 2003, comments on the proposed Part 52 update rulemaking included recommended changes to clarify Part 52 requirements and terminology relative to the required contents of COL applications.

This approach, which is consistent with the approach used for the Callaway FSAR, has at least two important advantages. First, it eliminates confusion by ensuring that the COL application presents generic DCD information only once. Second, it facilitates NRC review of the FSAR by distinguishing between new or modified information developed by the COL applicant vs. information that was reviewed and approved in a design certification proceeding.

While having these important advantages, there should be little or no practical difference to NRC reviewers and other users of the FSAR between this approach and the alternative identified by the staff on November 20 of repeating in the plant-specific DCD generic DCD information that is

unaffected by COL applicant exemptions and departures. This is primarily because COL applications, including FSARs, will be submitted on digital media. To support NRC reviewers and other users, hyperlinks are envisioned that will seamlessly link plant-specific information, including exemptions and departures from generic DCD information, to related generic DCD information that is unaffected by COL applicant changes. We agree with the NRC staff point on November 20 that it will be important under this approach to provide a copy of the generic DCD with the COL application.

COL applicant information subject to NRC review and public hearing

If a COLA application refers to a design certification and/or an ESP, the application will contain certain information that is considered resolved as provided by 10 CFR 52.39, subject to satisfaction of specified terms and conditions, for purposes of the COL and future proceedings, and thus not subject to further NRC review or public hearing. The following table summarizes the resolution status of various information within a COL application that references a design certification and/or ESP:

Matters considered resolved and <u>not</u> subject to NRC review or public hearing in a COL proceeding.	Matters considered unresolved and subject to NRC review and public hearing in a COL proceeding.
<p><u>If a design certification is referenced:</u></p> <ul style="list-style-type: none"> • Issues resolved in connection with the design certification proceeding, including the Tier 1/ITAAC and Tier 2 information approved in the generic DCD • Properly implemented plant-specific departures from Tier 2 of a referenced generic DCD. (These are considered within the envelope of the original safety finding on the standard plant design.) 	<ul style="list-style-type: none"> • Required COL application information beyond the scope of a referenced design certification • Exemptions from either Tier 1 or Tier 2 requirements of a generic DCD • Departures from Tier 2* information • Departures from Tier 2 that require prior NRC approval under 10 CFR 50.90
<p><u>If an ESP is referenced:</u></p> <ul style="list-style-type: none"> • Site safety, environmental and emergency preparedness issues resolved in connection with a referenced ESP 	<ul style="list-style-type: none"> • Significant environmental issues with respect to the site not considered in a previous proceeding • Variances from the ESP sought by the COL applicant

Change control, update and finality for FSAR information

As described above, we envision that the FSAR would interweave the plant-specific DCD with required information that is beyond the scope of a referenced design certification, such as operational program descriptions. While integration of this information within the FSAR is desirable from a user standpoint, it will be important to distinguish between information that is considered part of the plant-specific DCD vs. other FSAR information. This is because information in the plant-specific DCD is governed by the change control, update and finality provisions of the associated design certification rule, while other FSAR information is governed by the analogous provisions of 10 CFR Part 50. We expect that distinguishing between plant-specific DCD and other FSAR information will be accomplished by use of appropriate text highlighting techniques.

3. **Level of detail for a COL application** – If a generic DCD is referenced, the COL applicant will generally not add detail to the standard plant design information approved by the NRC in the design certification. An exception would be the generic technical specifications approved in a design certification. The COL applicant is required to provide plant-specific technical specifications that include specific values (e.g., setpoints) to replace blanks or bracketed values that exist in the generic technical specifications.

The safety review performed for design certification signifies NRC safety approval for a complete standard plant design, provided that generic site parameters bound actual site characteristics and specified interface requirements are met. Because design certification resolves all safety issues associated with the standard plant design, information approved in the generic DCD is sufficient and need not be modified or supplemented for approval of the COL, except to address plant-specific departures from the approved standard design. For example, Section 9.5.1.3 and Appendix 9A of the AP600 generic DCD present the Fire Protection Analysis for fire areas within the scope of the standard plant design. This information would be incorporated by reference in a COL application FSAR and would not be subject to further NRC review or public hearing. The FSAR would also identify plant-specific departures and proposed exemptions from the generic DCD.

The COL application is required to supplement the information approved in the generic DCD with plant-specific information about the ultimate heat sink, service water intake structure and other plant-specific design information. For example, a COL applicant would be expected to supplement

Appendix 9A of the AP600 generic DCD to address fire areas outside the scope of the standard design. Plant-specific information, including demonstration that interface requirements are met, is subject to NRC review and public hearing at COL. The level of detail for plant-specific design information will be consistent with that reflected in the generic DCD and analogous information approved by the NRC for current FSARs. Similarly, we expect that the scope, form and content of ITAAC associated with the plant-specific design will be analogous to those of the standard plant.

In areas such as operational programs, the guidance provided by the generic DCD and current FSARs may need to be augmented to determine the extent of description appropriate for COL applications. In such areas, guidance will be developed based on common understandings established via industry – NRC interactions.

- 4. Addressing COL Items identified in generic DCDs – COL applications** that refer to a design certification must contain information that addresses “COL Items” identified in the generic DCD.¹ COL Items are essentially place holders for plant-specific matters to be addressed by the COL applicant. The location within the FSAR where each COL Item is addressed will be identified in a table similar to Table 1.8-2 of the AP600 DCD.

Many COL Items pertain to the site characteristics or plant-specific design. Typical of these are the following:

- AP600 COL Item 8.3-2 – COL applicants referencing the AP600 certified design will address the design of grounding and lightning protection.
- AP600 COL Item 2.3-1 – COL applicants referencing the AP600 certified design will address site-specific information related to regional climatology.

COL applications will provide plant-specific information for NRC review that is sufficient to close out these types of COL Items. To the extent a COL Item is resolved by information contained in a referenced ESP, that information would not be subject to further NRC review or public hearing at COL.

There are a number of COL Items that can only be closed out after the COL is issued, including some that correspond to specific ITAAC. For example, several COL Items pertain to verification of as-built information, implementation of operational programs or development of plant procedures. Other COL Items specify a time, post-COL, that they are to be completed.

¹ COL Items are also listed in the FSERs for the existing design certifications, sometimes using different language than that used in the generic DCD. The COL Items that COL applicants are required to address are the ones identified in the generic DCD.

Examples include the following:

- AP600 COL Item 3.8-3 – The COL applicant will evaluate deviations from the design due to as-procured or as-built conditions and will summarize the results of the evaluation in an as-built summary report as described in subsections 3.8.3.5.7, 3.8.4.5.3 and 3.8.5.4.4. [corresponds to ITAAC 3.3-2.a.i]
- AP600 COL Item 13.2-1 – COL applicants referencing the AP600 certified design will develop and implement training programs for plant personnel. This includes the training program for the operations personnel who participate as subjects in the human factors engineering verification and validation.
- ABWR COL Item 1A3.1 – Emergency procedures, developed from the emergency procedures guidelines, shall be provided and implemented prior to fuel loading.

Information necessary to close out such COL Items will not be available at the time of COL application. COL applicants will address these COL Items via commitments in the COL application to provide the necessary information when it becomes available.

- 5. Plans for developing detailed COL application outlines** – As we discussed with the NRC staff on November 20, we intend to include in NEI 04-01 appendices that provide a detailed outline of COL applications that reference the ABWR or AP1000 standard plant designs. The outlines will reflect the assumption that an ESP is referenced. They will highlight the scope of work and additional information, e.g., to address COL Items, etc., that must be provided by the COL applicant. This will support our broader objective to facilitate cost, schedule and resources estimates to prepare a COL application. It is envisioned that these outlines would be used as a starting point for development of actual COL applications. A significant objective of this effort will be to identify COL application and review issues that warrant interaction with the NRC staff and discussion in NEI 04-01. We plan to seek NRC review and feedback on the outlines and expect that the insights resulting from this activity will be of value to all COL applicants, regardless of the design chosen or whether or not an ESP is referenced.

As presented for discussion on November 20, Attachment 2 is a template that has been prepared for use in developing detailed outlines. As indicated in the template, the outlines will identify interface requirements, COL Items and various commitments in the design control document that a COL applicant must address. In addition, Standard Review Plan review areas would be identified that are pertinent to the COL application phase review and are not otherwise encompassed by interface requirements, COL Items, etc. Sample template

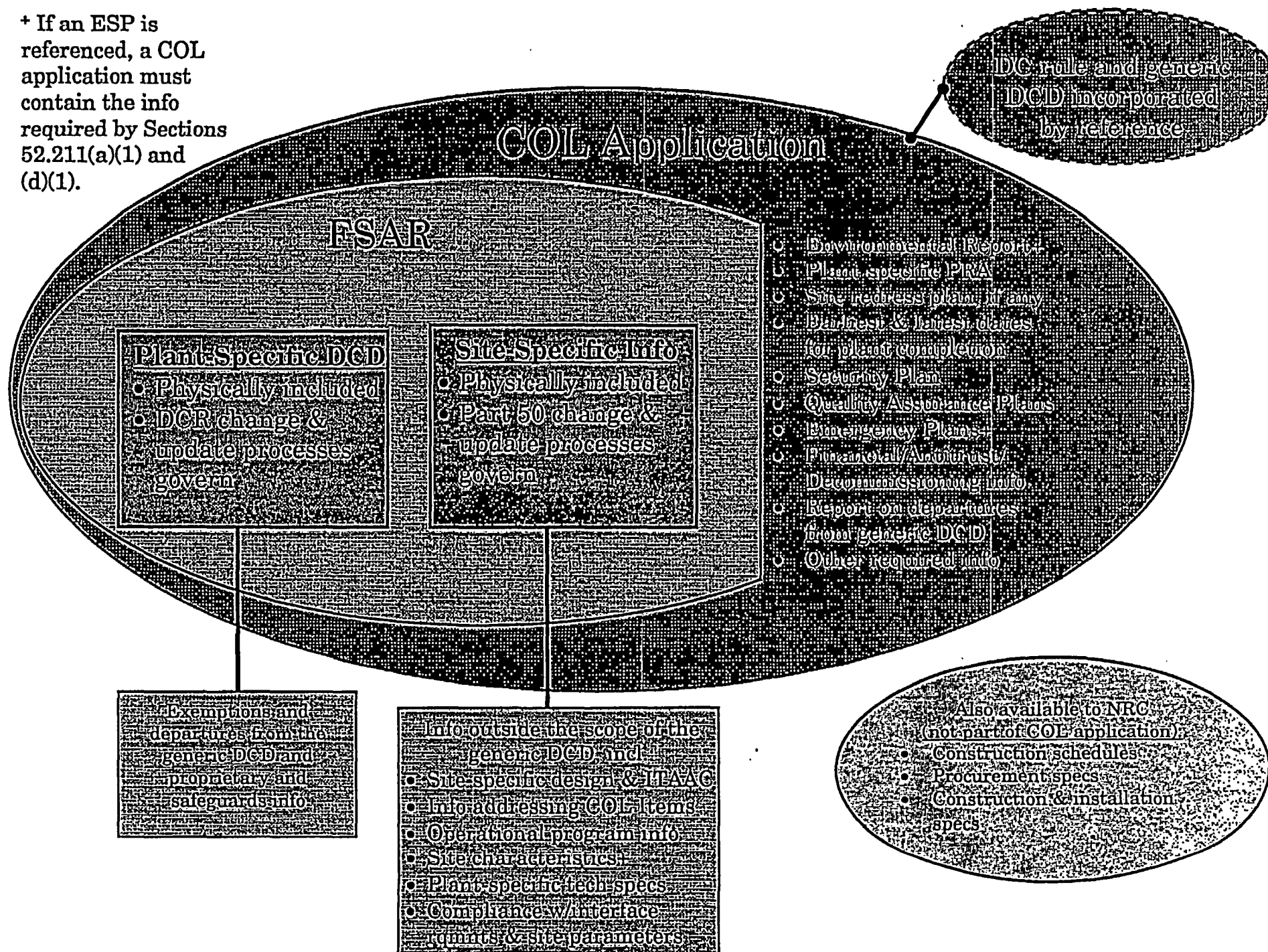
entries are provided to illustrate the type of information to be presented in COL application outlines.

To assist us in moving forward with this nascent activity, NRC feedback in at least two areas would be most helpful. First, with the objective in mind to highlight the COL applicant scope of work, please provide feedback on whether our approach for developing detailed outlines is consistent with the staff's expectations for COL applications. In particular, are our approach and the information we plan to capture in COL application outlines sufficiently comprehensive to itemize the COL applicant scope of work?

Second, as indicated above, we intend to consult the SRP to identify NRC review areas pertinent to the COL application phase review that are not encompassed by the interface requirements, COL Items and various commitments identified in the design control document. To support this task, we need to understand the revision status of the SRP. The NRC staff took action items from our November 20 meeting to provide (1) guidance regarding which revision of SRP sections we should use, and (2) the status of SRP Chapter 2, which is not currently available on the NRC website.

We understand that the staff is already in the process of addressing the "status, approach and plans for maintaining a current and effective [SRP] for staff and applicant use" in response to an October 31 request from the Commission. We request that the staff also address the immediate need for guidance on interim use of the SRP pending completion of any longer term solutions that the staff may pursue. To support our schedule for developing COL application outlines, please provide guidance on interim use of the SRP by January 29, 2004.

+ If an ESP is referenced, a COL application must contain the info required by Sections 52.211(a)(1) and (d)(1).



Standard Format for COL Application Section Outline Deliverables					NEI Draft	Attachment 2 to Enclosure 1 -1/12/04		
		COL Applicant Scope of Info (Supplements approved DCD info)		(4) Engineering inputs or other resources necessary to develop COL applicant scope of info	Recommended timing and mechanism for closure of COL Item or Embedded Commitment			(8) Remarks, e.g., additional COL applicant scope SRP Review Areas, Tech Spec Bases consideration, etc.
(1) AP1000 or ABWR Generic DCD Section	(2) Interface requirement or COL Item (Identify corresponding ITAAC, if any)	(3) Embedded Commitment			(5) Closure Time Frame (COL Issuance, fuel load, etc.)	(6) Corresponding SRP Section, if any	(7) Recommended closure mechanism	
Number	Title							
8.3.1.1.1	Onsite AC Power System	None	None	n/a	n/a	n/a	n/a	Example
8.3.1.1.6	Containment Building Electrical Penetrations	COL Item 8.3.3.5 – COL applicant will establish plant procedures for periodic testing of penetration protective devices	Class 1E protective devices are IAW IEEE- 741	Penetration manufacturer recommendations	Post-COL		Plant procedures to be developed prior to plant operation	Example
8.3.1.1.8	Lightning Protection	COL Item 8.3.3.1b – COL applicant will address the design for lightning protection	None	Site-specific characteristics for lightning activity	COL		Design engineering specification and process	Example
8.3.1.3.3	Cable Derating and Cable Tray Fill	None	Cable tray fill in excess of 40% will be analyzed and the acceptability documented	Tray fill information	Post-COL		Design engineering specification and process	Example
Table notes								
* "None" in Column 2 means generic DCD contains all necessary and sufficient info for that section. COL applicant is responsible for verifying the validity of generic DCD info and identifying any departures or exemptions in the plant-specific DCD.								
Embedded commitments include things like the cable tray fill criterion in AP1000 DCD Section 8.3.1.3.3 and specification of codes, standards, regulatory guides, etc., to be used in developing COL applicant info.								
Additional Requested Information								
1) Identify anticipated NRC issues associated with the COL applicant scope of information or DCD interface-related issues (based on recent industry experience, generic communications, regulatory guidance, etc.).								
a.								
b.								
2) Identify any COL applicant scope of information that may be amenable to development of standard content, i.e., site-independent information, such as information to address a pending generic regulatory issue.								
a.								
b.								
3) Identify any opportunities for improved operational processes, including risk-informed approaches, and identify revisions to NRC requirements or deviations from existing regulatory guidance, and bases therefor, that might be necessary to implement the improved process.								
a.								
b.								

Enclosure 2 January 12, 2004

COL Process and Construction Inspection Program
NEI-NRC Generic Discussion Topics

COL/CIP Topic		Priority / Time Frame	Discussion/Resolution Vehicle	Interim Milestone(s)
COL-1	Identify most likely COL scenarios, develop nominal NRC review/hearing timeline(s) and identify opportunities to optimize the COL licensing process	2Q03/4Q04	TBD	TBD – Industry proposals
COL-2	Develop COL application format and content guidance, including detailed outline and generic material (NEI 04-01)	2Q03/4Q04	NEI COLA Guideline	<ul style="list-style-type: none"> • 11/20/03 initial mtg w/NRC • 2Q04 – Detailed COLA outline • 4Q04 – Rev. 0 NEI 04-01
COL-3	Establish a common understanding with NRC regarding the Engineering Design Verification process	2Q03/4Q03	<ul style="list-style-type: none"> • NEI 11/01 white paper • Draft CIP Framework Doc • NRC Insp. Guidance 	<ul style="list-style-type: none"> • August 27 NRC Workshop • Oct. 30 industry comments • 2Q04 – Rev. 0 Framework Doc
COL-4	Establish a common understanding with NRC regarding the ITAAC Verification process	2Q03/4Q03		
COL-5	Establish a common understanding with NRC regarding the 10 CFR 52.103 ITAAC hearing process	2Q03/4Q03	TBD	TBD – NRC feedback on NEI 11/01 white paper
COL-6	Establish a common understanding with NRC regarding the process for assuring operational readiness and transition to operation under Part 52	2Q03/4Q03	<ul style="list-style-type: none"> • NEI 11/01 white paper • CIP Framework Doc • NRC Insp. Guidance 	<ul style="list-style-type: none"> • August 27 NRC Workshop • Oct. 30 industry comments • 2Q04 – Rev. 0 Framework Doc
COL-7	Maximize the clarity and effectiveness of Part 52 requirements	2Q03/2Q04	<ul style="list-style-type: none"> • NOPR • SECY on proposed Final Rule • SRM/Final Rule 	<ul style="list-style-type: none"> • Sept. 16 & 30 industry comments on Part 52 NOPR • 3Q04 – Proposed final rule
COL-8	Determine the treatment of operational programs in a COL application	1Q04	<ul style="list-style-type: none"> • SECY (due 3/04) • SRM 	<ul style="list-style-type: none"> • August 25 NRC Workshop • Sept. 15 industry comments
COL-9	Development of COLA guidance on ESP – COL interface issues	2003/04	NEI 04-01	
COL-10	Development of COLA guidance on the form and content for the emergency planning ITAAC required by Part 52	2003/04	NEI 04-01	
COL-11	Development of COLA guidance for providing required plant-specific design information and	2003/04	NEI 04-01	

COL/CIP Topic		Priority / Time Frame	Discussion/Resolution Vehicle	Interim Milestone(s)
	associated ITAAC			
COL-12	Identify and address "COL Items" from certified designs that can be addressed generically in advance of the first applications	2003/04	NEI 04-01	
COL-13	Define and address seismic-related issues that need to be resolved to support COL applications and reviews	2003/04	NEI 04-01	
COL-14	Development of COLA guidance on providing required plant-specific PRAs	2004	NEI 04-01	
COL-15	Development of COLA guidance on seeking Limited Work Authorizations (LWA-1 and LWA-2), including guidance on site redress plans	2004	NEI 04-01	
COL-16	Development of guidance for completion of design acceptance criteria (e.g., human factors, control room design, digital I&C) in certified designs	2004	TBD	
COL-17	Development of a human factors engineering plan to address plant staffing requirements (levels and qualifications) of personnel.	2005	TBD	
COL-18	Development of COL form and content, including NRC findings, license conditions, etc.	2005	TBD	
COL-19	Development of Emergency Action Levels appropriate to advanced reactor designs	2005	TBD	
COL-20	Development of guidance on plant-specific technical specifications, including evaluation of lessons learned since the issuance of the ALWR design certifications.	2005	TBD	
COL-21	Development of change process guidelines for control of various categories of COLA information (e.g., Tier 1, Tier 2, Tier 2*, severe accident related, plant specific, etc.)	2005	TBD	
COL-22	Modular plant licensing issues	TBD	TBD	
COL-23	Identify and assess issues peculiar to the no-ESP scenario and the adequacy of existing guidance to support that scenario	TBD	TBD	